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Changing Freight Rate And Delivered Cost Patterns For Competing Southern Pine And Douglas Fir Lumber

By
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The two major softwood lumber producing centers of the United States are the Southern pine region (including Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and eastern Oklahoma and Texas) and the Douglas fir region of western Oregon and Washington. About one-third of the nation's softwood lumber is produced in the Southern pine region and about forty per cent in the Douglas fir region. The country's greatest softwood lumber consuming center outside the producing areas, however, is in the industrialized northeastern and midwestern states, roughly east of the Mississippi and north of the Ohio rivers, which account for approximately one-third of the country's lumber consumption. Most of the softwood lumber consumed in these northeastern and midwestern states comes either from the South or the West.

Many Southern pine items, especially of the so-called Longleaf variety, are highly competitive in use and price with equivalent Douglas fir items marketed in the Northeast. Anything affecting the delivered cost relationships between the two competing woods may have serious consequences for the adversely affected producers. As freight charges frequently account for one-fourth or more of the delivered cost of the most competitive lumber items, any proposed change in the freight rate structure is likely to generate a considerable amount of heat. It is the purpose of this article to outline the major railroad freight rate changes on Southern and Western lumber which have occurred during recent years, to compare the present freight rate structures for Southern pine and Douglas fir lumber, to describe recent changes in delivered costs for the two woods, and to explore some of the im-

plications of these delivered cost changes.

Freight Rate Changes

During recent rate hearings, Southern pine lumber producers have contended that there has been no historical fixed relationship between Southern and Western lumber rates. Western lumber producers, on the other hand, have claimed that there is a definite relationship between Southern and Western lumber rates to the Northeast, and that this relationship has been distorted to their disadvantage by general freight rate increases since 1918, which have led to a greater absolute spread between Southern and Western rates.¹ Southern producers have maintained that their nearness to extra-regional markets is an inherent locational advantage which should be retained, while western producers have complained that they must ship from two to three times as far as their southern rivals in order to reach competitive northeastern markets.

When large-scale production of Southern pine lumber started during the last century, it had to meet competition from Northern white pine. Consequently, rail carriers serving the South established low freight rates to allow southern producers to compete with northern producers. Also, blanket origin groups were established in the South by mutual carrier action as early as 1892.² These early freight rates on Southern pine lumber moving from Mississippi Valley origins and from eastern Texas and western Louisiana were combination rates on Ohio and Mississippi river crossings; that is, the aggregate rate was the rate to these crossings plus the rate from the crossings to destination. Lumber originating east of the Mississippi Valley and mov-

1. See 248 I. C. C. 545 (1942). The same arguments have been presented in following hearings.

2. A continuous summarized history of early grouping and rate practices in the Southern pine region is presented in the following Interstate Commerce Commission decisions:

16 I.C.C. 323 (1909); 34 I.C.C. 652 (1915); 42 I.C.C. 548 (1917); 85 I.C.C. 270 (1923); 157 I.C.C. 280 (1929); 183 I.C.C. 191 (1932).

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ing northward generally took combination rates on Virginia and West Virginia gateways, while Douglas fir lumber moving into northeastern areas took a combination based on Chicago. When published through rates became common, prior to World War I, these new rates often were the same as the former combination rates.

Beginning in 1918, a series of rate changes extending to 1933 had the net effect of widening the absolute spread of western over southern lumber rates to Chicago, the leading midwestern lumber market, by 5.5 cents per hundred pounds.³ From another viewpoint, however, the southern rate was increased from a little more than 48 per cent to almost 53 per cent of the western rate, or, the southern rate was increased by about 43 per cent over its base while the western rate was increased only about 31 per cent.⁴

Utilization of the Panama Canal allowed inter-coastal water carriers to make considerable inroads on the railroad lumber traffic from the Douglas fir area to the Northeast following World War I. In 1935, to meet this severe water competition, western railroad carriers proposed a blanket rate of 72 cents per hundred pounds (the Chicago rate) on lumber moving from the Pacific Coast to all points east of the Illinois-Indiana state line and roughly north of a line drawn from the southern end of this state boundary to the Atlantic Ocean just south of Norfolk. The Hattiesburg to Chicago rate at this time was 38 cents per hundred pounds. Much to the displeasure of southern lumbermen, this "Northeastern Blanket" eventually was approved by the Interstate Commerce Commission.⁵ From the viewpoint of western rail carriers, this blanket has been a success; within less than three years the proportion of lumber moving by rail from the Douglas fir region into the blanketed area increased by 250 per cent.

In 1938, a general rate increase of five per cent was limited to six cents per hundred pounds on lumber.⁶ A six per cent increase in 1942 was suspended in 1943 and restored on an interim basis in 1946.⁷ This interim increase was replaced by a 20 per cent increase with a lumber maximum of

ten cents per hundred pounds on January 1, 1947.⁸ Since that time, there has been a 25 per cent increase (between territories) with a 20 cents per hundred pounds lumber maximum, a nine per cent or ten per cent increase (ten per cent within and between Southern and Eastern territories and nine per cent elsewhere) with a six cents per hundred pounds maximum on lumber, and a 15 per cent increase with a lumber maximum of 12 cents per hundred pounds.⁹ The maximum increases allowed on lumber have been based on the absolute increases obtained by applying percentage increases on rates from Hattiesburg, Mississippi, to Chicago. This "Hattiesburg-to-Chicago" maximum formula seems to be a well established principle of lumber rate making policy.

To summarize, since World War II, lumber freight rate increases have raised the spread of Douglas fir rates over Hattiesburg rates to Chicago from 36 cents to 47.5 cents per hundred pounds. This probably has not been disadvantageous to western producers, however, as percentagewise the Hattiesburg rates have increased by 90 per cent over their pre-war base, while the equivalent Douglas fir increase has been only about 62.5 per cent.

8. 286 I.C.C. 537 (1946).

9. 270 I.C.C. 93 (1948) and 270 I.C.C. 403 (1948); 276 I.C.C. 9 (1949); 284 I.C.C. 589 (1952).

3. The 1918 increase was authorized by General Order 28 of the Director General of Railroads. The other changes were effected by the following decisions:

58 I.C.C. 220 (1920); 68 I.C.C. 676 (1922); 178 I.C.C. 539 (1931); 179 I.C.C. 215 (1931).

4. In this article, the Southern pine rates referred to are the rates applicable from Hattiesburg, Mississippi, which has been considered a key Southern pine origin point by carriers, producers, and the Interstate Commerce Commission. Based on a random check of rates from several hundred stations by the author, it appears that as many as one-half of all Southern pine stations may use the Hattiesburg rate on lumber shipments into the Western Great Lakes and Plains-Mountain states, with a somewhat smaller (but still considerable) group using Hattiesburg rates on Northeastern shipments.

Lumber moving into transcontinental channels from the Douglas fir region of western Oregon and Washington takes the same rate to destination regardless of point of origin within the region.

5. 210 I.C.C. 317 (1935).

The blanket rate was raised to 78 cents in 1936.

6. 226 I.C.C. 41 (1938).

7. 248 I.C.C. 545 (1942) and 264 I.C.C. 695 (1946).

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TABLE 1
COMPARATIVE RAILROAD FREIGHT CHARGES ON DRESSED AND DRIED
SOUTHERN PINE TWO-BY-FOURS (LONGLEAF) AND ON DRESSED AND
DRIED DOUGLAS FIR TWO-BY-FOURS MOVING FROM HATTIES-
BURG, MISSISSIPPI, AND FROM PORTLAND, OREGON, TO
CHICAGO, SELECTED DATES

Date	Charges from Hattiesburg, per 1,000 bd. ft.	Charges from Portland, per 1,000 bd. ft.	Spread, Portland over Hattiesburg
March 28, 1938	\$10.80	\$16.72	\$5.92
July 1, 1946	11.34	17.60	6.26
January 1, 1949	17.82	24.53	6.71
May 2, 1952	19.67	27.79	8.12

Source: Calculated by the author from the applicable freight rates and from average weight figures supplied by the Southern Pine Association and the West Coast Lumbermen's Association in rate hearings.

The Hattiesburg-to-Chicago maximum formula has allowed Southern rates to increase proportionately more than has been allowed on the longer shipments from the west. Stated in another way, the Hattiesburg to Chicago rate, which was about 52.6% of the rate from the Douglas fir area to Chicago at the end of World War II, now is about 61.5 per cent of the Douglas fir rate. Table 1 indicates the nature of the changes that have occurred in freight charges on lumber from the two regions to Chicago since 1938. A simple arithmetic calculation will reveal that in a situation of the kind under consideration here, the percentage increase is much more of a competitive disadvantage than is the absolute increase.

The Present Freight Rate Structure

The transcontinental railroad freight rate struc-

ture for Douglas fir lumber, as shown by Figure 1, is characterized by one origin group and by several large destination rate blankets. At least ten such destination blankets exist, separated in some instances by buffer areas of non-blanketed rates. In addition to the conveniences of rate quotation and routing which such blankets afford, most of them are explainable in terms of carrier and producer competition, local pressures, and factors of transportation geography.¹⁰

Origin groups in the Southern pine area vary with the destination. There are at least a dozen such

10. Large destination blankets on eastbound transcontinental shipments are not unique, of course. A discussion of several important commodities moving eastward from California, with maps, is presented in Stuart Daggett and John P. Carter, *The Structure of Transcontinental Railroad Rates* (Berkeley: University of California Press, 1947), Chapt. IV.

Also, for a critical discussion of blanketing practices, see Truman C. Bigham and Merrill J. Roberts, *Citrus Fruit Rates* (Gainesville: University of Florida Press, 1950), pp. 103-110.

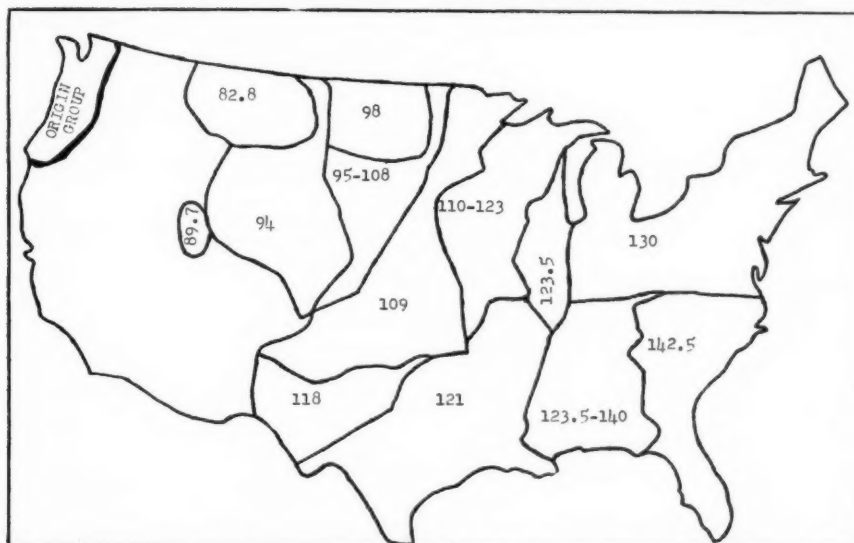


Figure 1. — Carload railroad freight rates in cents per hundred pounds on lumber originating from the Douglas fir region, February 1956.

Source: Drawn by the author from freight rates supplied by the Traffic Departments of the West Coast Lumbermen's Association and the Western Pine Association, Portland, Oregon.



FEBRUARY ATLANTA AREA ECONOMIC INDICATORS

ITEM	FEBRUARY 1956	JANUARY 1956	% CHANGE	FEBRUARY 1955	% CHANGE
EMPLOYMENT					
Job Insurance (Unemployment) Payments -----	\$218,757	\$198,746	+10.1	\$292,889	-25.3
Job Insurance Claimants† -----	3,756	3,526	+6.5	5,252	-28.5
Total Non-Agricultural Employment -----	327,150	326,300*	+0.3	306,950*	+6.6
Manufacturing Employment -----	90,000	90,550*	-0.6	82,950*	+8.5
Average Weekly Earnings, Factory Workers -----	\$69.77	\$68.06	+2.5	\$64.88	+7.5
Average Weekly Hours, Factory Workers -----	40.1	39.8	+0.8	40.3	-0.5
Number Help Wanted Ads -----	8,735	9,496	-8.0	7,491	+16.6
CONSTRUCTION					
Number of Building Permits, City of Atlanta -----	795	707	+12.4	779	+2.1
Value Building Permits, City of Atlanta -----	\$4,767,708	\$4,007,423	+19.0	\$4,671,619	+2.1
Employees in Contract Construction --	19,500	19,150*	+1.8	16,700*	+16.8
FINANCIAL					
Bank Debits (Millions) -----	\$1,395.0	\$1,538.7	-9.3	\$1,243.4	+12.2
Total Deposits (Millions) (Last Wednesday) -----	\$1,023.5	\$1,052.3	-2.7	\$1,016.7	+0.7
POSTAL§					
Postal Receipts -----	\$1,473,829	\$1,402,460	+5.1	\$1,330,732	+10.8
Poundage 2nd Class Mail -----	1,356,426	1,206,610	+12.4	1,253,719	+8.2
OTHER					
Department Store Sales Index (Adjusted) (1947-49=100) -----	142	149	-4.7	142*	0.0
Retail Food Price Index (1947-49=100) -----	107.9	108.2	-0.3	110.1	-2.0
Number of Telephones in Service -----	274,781	275,189	-0.1	258,350	+6.4
Number of Local Calls per day -----	1,969,560	1,906,470	+3.3	1,836,119	+7.3

*Revised

§City of Atlanta only.

Sources: All data on employment, unemployment, hours, and earnings: Employment Security Agency, Georgia Department of Labor; Number Help Wanted Ads: Atlanta Newspapers, Inc.; Building permits data: Office of the Building Inspector, Atlanta, Georgia; Financial data: Board of Governors, Federal Reserve System; Postal data: Atlanta Post Office; Retail Food Price Index: U. S. Department of Labor; Department Store Sales and Stocks Indexes: Federal Reserve Bank of Atlanta and Board of Governors, Federal Reserve System; Telephones in Service: Southern Bell Telephone and Telegraph Company.



JANUARY THROUGH FEBRUARY, 1955 and 1956

1956	1955	ITEM	% Change
18,231	15,581	Number Help Wanted Ads -----	+17.0
\$2,933.7	\$2,573.6	Bank Debits (Millions) -----	+14.0
19,325	17,475	No. Construction Employees* -----	+10.6
90,275	82,250	No. Manufacturing Employees* -----	+9.8
326,725	302,100	Total Non-Agricultural Employment* -----	+8.2
\$2,876,289	\$2,593,515	Postal Receipts, Atlanta Post Office -----	+6.8
\$68.92	\$64.72	Average Weekly Earnings, Factory Workers* -----	+6.5
274,781	258,350	Telephones in Service** -----	+6.4
N. A.	N. A.	Department Store Sales, Based on Dollar Amounts** -----	+4.0
N. A.	N. A.	Department Store Stocks** -----	+4.0
1,502	1,479	Number Building Permits, City of Atlanta -----	+1.6
40.7	40.2	Average Weekly Hours, Factory Workers* -----	+1.2
\$1,023.5	\$1,016.7	Total Deposits (Millions)** -----	+0.7
2,563,036	2,570,760	Poundage 2nd Class Mail, Atlanta Post Office -----	-0.3
107.9	110.1	Retail Food Price Index (February) -----	-2.0
7,282	10,949	Job Insurance Claimants -----	-33.5
\$8,771,131	\$16,282,570	Value Building Permits, City of Atlanta -----	-46.1

*Average Month

**End of Period

N. A.—Not Available

Sources: Same as page 4

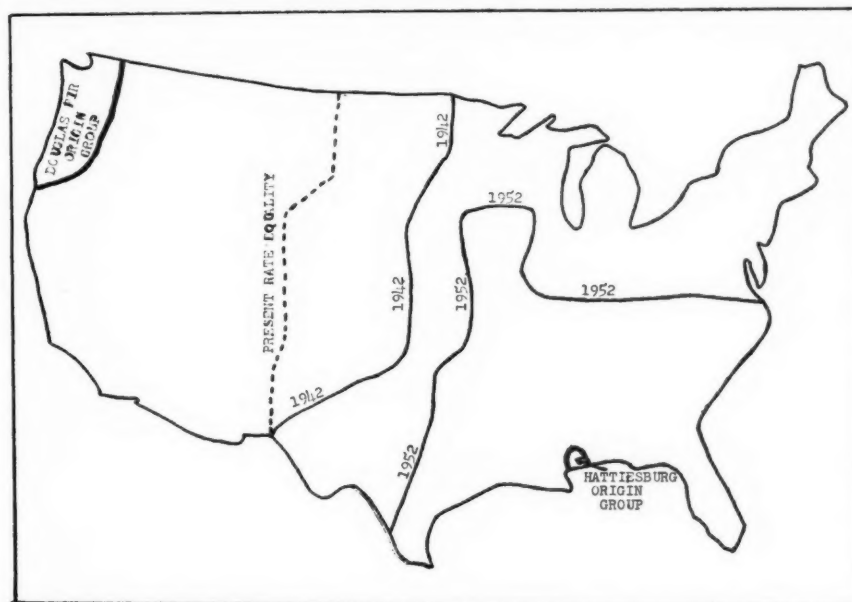


Figure 3. — Lines connecting points of approximate present (February 1956) equality of freight rates in cents per hundred pounds, and points of approximate equality of delivered costs per 1,000 board feet on lumber shipped by rail from the Douglas fir region and from Hattiesburg in 1942 and 1952. The broken line designates **freight rate** equality, while the solid lines indicate **delivered cost** equality for 1942 and 1952 respectively.

Source: Calculated and drawn by the author as described in the accompanying text.

not necessarily give Southern pine producers a significant competitive advantage, however. Longleaf Southern pine lumber often outweighs equivalent Douglas fir lumber by as much as 15 per cent, thus pushing the line of **freight charge equality** per thousand board feet of lumber considerably further eastward than the line of **freight rate equality** described above.

In addition to freight charges, production costs must be considered in arriving at comparative delivered cost figures for the two woods. Basically because of a different type of raw material (larger trees and denser stands in the Douglas fir region,

which permit greater mechanization) Southern pine lumber production costs per thousand board feet are higher than Douglas fir production costs, and the absolute cost spread between the two woods has increased since pre-World War II years.

Table 2 shows comparative reported weighted average production costs (that is, total production costs divided by the total output of all reporting mills), including marketing costs but excluding transportation costs, for Southern pine and Douglas fir lumber during various selected years. Averages, of course, can be misleading in the lumber industry, where considerable individual cost variation may

TABLE 2
WEIGHTED AVERAGE PRODUCTION COSTS OF DOUGLAS FIR
AND SOUTHERN PINE LUMBER, SELECTED YEARS

Year	Southern Pine Costs (per 1,000 bd. ft.)	Douglas Fir Costs (per 1,000 bd. ft.)	Spread, Pine over Fir
1939	\$25.04	\$19.21	\$ 5.83
1946	51.10	37.22	13.88
1948	67.58	55.73	11.85
1950	71.05	55.66	15.39
1952	79.51	66.96	12.55

Sources: Based on Southern Pine Costs (New Orleans: Southern Pine Association, various years), and 1952 Statistical Yearbook (Portland: West Coast Lumbermen's Association, 1953). Minor statistical adjustments have been made in reported Southern pine figures to make them more comparable to Douglas fir figures. This table has been published previously in the author's "Expanding Domestic Markets for Northwestern Lumber," *Pacific Northwest Business*, January, 1956. Later costs were not available at the time of preparation of the table.

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occur, but these reported figures appear to be useable for comparative purposes. According to the respective trade associations, Douglas fir figures are based on a survey of all known mills, while Southern pine figures are based on a selected sample (in general, including about 60 mills, but with some yearly variation).

By adding weighted average regional production cost figures to freight charges from each region to given destinations, it is possible to plot on a map for any given time a line of approximately equal delivered costs. This has been done in Figure 3, using present (February 1956) freight rates, a 15 per cent weight differential, and 1952 production costs as shown in Table 2. Inherent weaknesses in such a map include individual variations from average weights and production costs, the fact that not all Southern pine rates are the same as Hattiesburg rates (see n. 4, above), and various exceptions to the over-all rate patterns pictured in Figures 1 and 2. Despite its limitations, though, a map such as Figure 3 may be of use in indicating in which areas each wood logically should tend to dominate, in showing the effects of production cost and freight charge changes over time, and in pointing out the significant difference between freight rate equality and delivered cost equality.

A comparison of Figure 3 with recent lumber marketing statistics (see n. 12, above) indicates that Douglas fir producers now have a delivered cost advantage in areas accounting for about three-fourths of all domestic rail lumber terminations, whereas in 1952 Southern pine producers had a delivered cost advantage in areas accounting for two-thirds of the nation's softwood lumber consumption. In 1953 less than 60 per cent of Southern pine lumber terminations were inside the area where a Southern pine delivered cost advantage, as shown in Figure 3, exists. On the other hand, approximately 75 per cent of 1954 Douglas fir domestic rail terminations were inside the area where its producers have a delivered cost advantage. Between 1942 and 1954, while the percentage of all Douglas fir lumber domestic shipments terminating outside

the West Coast states increased from 66 to 79 per cent, Southern pine extra-regional marketing as a percentage of production was increasing by only a little more than five per cent.

Conclusions

Nearness to market, although often a significant competitive advantage when all other things are approximately equal, loses much of its significance in the Douglas fir-Southern pine lumber marketing situation. Locational advantages of the South may be largely offset by the West's lower production costs, lower weight product, and availability to low-priced water transportation. The competitive position of southern lumber producers has worsened steadily during recent years, until it is likely that they as a group, rather than their western rivals, are freight absorbers in common northeastern markets.

Not all, in fact not even a major part, of the apparent competitive difficulties of Southern pine lumber producers can be attributed to changing freight rate relationships. Certainly straight percentage rate increases (that is, without the maximums) would tend to favor southern producers. Very extreme rate changes would be required, though, to offset the other advantages of western producers. As it appears very unlikely that such drastic rate changes will be forthcoming in the foreseeable future, what alternatives face southern lumbermen?

One possible avenue open to Southern pine lumber producers is to lower their production costs. Actually, however, this avenue may be very effectively blocked by a rising trend in wage rates unaccompanied by any significant favorable changes in raw material quality or production techniques. A second alternative is to absorb freight and take lower profits in competitive northeastern markets. A third choice is to withdraw from markets where Douglas fir has a competitive price advantage, thus curtailing southern production. Finally, southern lumbermen may strive even harder to build up intra-regional lumber markets, and consequently dispose of more of their product in areas where their delivered cost situation is most favorable.